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ABSTRACT

This paper focuses on how the entrance of greater numbers of adults into university classes has changed and should continue to change the methods of teaching. The first part of the paper traces the history of the philosophy of adult education, recounting liberal education theories, progressive theories, behaviorist theories, humanistic approaches, and radical adult education theories. The second part details how the various concepts of adult development advocated by recent researchers such as Houle and Knowles have led to changes in adult education. This section is followed by two sections providing information on adult learning styles and adult critical thinking skills as seen through research in adult education. The final section seeks to apply these principles in the university classroom, suggesting refinements in teaching principles, teaching methodologies, classroom environment, classroom activities, classroom techniques, and student expectations in order to respond to adult students. A five-page bibliography is included in the paper. (KC)

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ADULT LEARNING, ADULT LEARNING STYLES, AND CRITICAL THINKING

THE IMPACT ON THE UNIVERSITY CLASSROOM

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ADULT LEARNING, ADULT LEARNING STYLES, AND CRITICAL THINKING:

THE IMPACT ON THE UNIVERSITY CLASSROOM

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"If I'm having fun, how can I be learning?"

Adult Student

In a study conducted by the Chancellor's Office (Mills 1988) it was determined that in the CSU system, over 43 percent of the students are adult (25 and older); at the Los Angeles campus, the percentage is approximately 55. The average age of the students in educational administration at California State University, Los Angeles is 35.

Ackell (1981) points out that universities need to adapt to the increasing influx of adult students to develop an "equity institution." He states that faculty development programs to improve teaching are a part of the process.

Scheckley (1984) describes the adult as a learner and suggests implications for higher education, including "designing facilitating learning environments" sensitive to the heterogeneous composition of the adult student body.

The purpose of this paper is to determine how to provide the best learning environment for the adult students in the Educational Administration Program. Included will be:

I. History of the philosophy of adult education

II. Concepts of adult development

III. Adult learning styles

IV. Processes of adult critical thinking skills

V. Application in the university classroom

VI. Summary

VII. Bibliography

I. HISTORY OF THE PHILOSOPHY OF ADULT EDUCATION

Elias (1980) describes the history and major philosophies that have influenced the field of adult education: liberal adult education, progressive adult education, behaviorist adult education, humanistic adult education, and radical adult education.

A. Liberal Adult Education

Elias (1980) and Weiland (1977) point out that liberal adult education traces its origins to the classical Greek philosophers, Socrates, Plato and Aristotle. In the United States, the liberal adult education movement started in the Colonial colleges; Harvard University set the standard for liberal education. In the 1820's, the Lyceum Movement, founded by Josiah Holbrook, used study groups to spread adult education to many cities and towns. After the Civil War, Joseph Vincent founded the Chautauqua, a process whereby speakers traveled to centers to espouse a "strong religious orientation with liberal education." (Elias 1980). In the 1890's adult education became a part of extension programs established by several universities. Elias goes on to state that after World War I there was a resurgence of adult liberal arts education. He points out that the mature students are returning to the universities to explore studies.

B. Progressive Adult Education

Elias (1980, 45) believes that "Progressivism has had a greater impact upon the adult education movement in the United States than any other single school of thought." He cites Knowles (1977), Rogers

(1969), Houle (1972), Dewey (1938), Lindeman (1956), Bergevin (1967) and Freire (1970) as proponents of progressive thought. Subsumed under the category of progressive adult education is vocational education, extension education, education of the foreign born, citizenship education, family and parent education, and education for social action.

C. Behaviorist Adult Education

According to Elias (1980), behaviorism has had its greatest influence on adult education insofar as curriculum design and program development. Writing specific objectives, developing learning experiences to facilitate obtaining the objectives, and delineating a process of evaluation are processes described that indicate whether, according to Tyler (1949, 111) students have "acquired given types of behavior." Tyler's influence, according to Houle (1972) influences adult education today. Competency based education as well as programmed instruction as developed by Skinner (1968) emanate from this design.

D. Humanistic Adult Education

Elias (1980) states that humanistic adult education is "student-centered." The teacher does not necessarily know best. Moreover the responsibility for learning is on the student and the teacher is the facilitator of the event. Since the "act of learning" is a personal endeavor, he points out that the student learns what he/she feels is necessary. Therefore the evaluation should be from the student's perspective. Curriculum is seen as being developed according to the needs of the students. Further the process is dependent on a cooperative, supportive environment. Malcolm Knowles (1970) states

that humanist education is especially suited to adults and proposed andragogy as the process of teaching, not pedagogy.

E. Radical Adult Education

Paolo Freire (1970) describes a theory of using adult education as a means of educating the illiterate to enable them to become part of the mainstream of society and break away from the social, economic and political forces keeping them in oppression. Traditional education is criticized because it is seen as conditioning students for obedience and docility (Ferrer, 1913). Radical education (Elias 1980) had its roots in the 18th, 19th and 20th Century thinkers. The emphasis on empowering the worker by emphasizing the abilities they possess is not an unknown theme in contemporary America. Freire's work can be seen as very timely in a multicultural community where stereotypes often influence teacher perceptions, resulting in a limitation of student potential.

II. CONCEPTS OF ADULT DEVELOPMENT

The concepts of adult development have been described in various ways. Gould (1978), Smelser and Erikson, Eds. (1980), Erikson (1980) Levinson (1978) and Neugarten (1968) describe stages of development. However, as pointed out by Robinson (1979), the stages of adult development are only "true for one-third of all adults at a particular age; another one-third are ahead and one-third behind. But the sequence tends to occur on schedule."

Wortley and Amatea (1982) developed a conceptual framework, distinguishing between career, family, intimacy and inner life, and delineated the life stages of adults in each category. They point out that there are underlying assumptions that "there is an identifiable set of changes....; the process are not discrete....; each life change is

influenced by previous developmental changes....; and adult changes are not tied to biological aging per se, but to a complex of multiple environmental, interpersonal, and intrapsychic factors." (1982, 478)

McCoy (1977) delineates seven development stages of adults: leaving home (18-22); becoming adult (23-28); catch-30 (29-34); midlife re-examination (35-43); restabilization (44-55); preparation for retirement (56-64); and retirement (65+). She then describes different adult continuing education program responses that can be offered to meet the needs of the different age groupings.

Erikson's (1980) delineation of adult stages are categorized by early adulthood, where the issue is "intimacy vs. isolation;" middle adulthood, where the issue is "generativity vs. stagnation;" and later adulthood, which is defined as "integrity vs. despair." According to Robinson (1979), Sheehy (1972), Gould (1978) Levinson (1978) delineate the stages more discretely. They define ages 18-22 as pulling up roots; ages 22-28 as adult; ages 28-33 as Catch-30 (as did McCoy [1977]), ages 33-38 as becoming one's own person, ages 38-46 as midlife transition; ages 46-53 as settling down; age 53-60 as renewal or resignation; and ages 60-65 as late adult transition.

Gilligan (1982) raises the concern, however, that most research on adult development has focused on men and has been extrapolated for women. She points out that many of the definitions in the literature do not describe the experience of women. She points out (162): "Thus the sequential ordering of identity and intimacy in the transition from adolescence to adulthood better fits the development of men than it does the development of women." Further, she addresses Miller (1976) who calls for "a new psychology of women" because it recognizes the different

starting point for women's development. Clearly the models of adult development will require greater research and exploration to determine if they are responsive to the adult development of women.

A related issue is cross-cultural influences on adult development. Ross (1984) points out that there is little in the literature focusing on the adult development of other cultures. As a result, he studied the differences between two groups of men (immigrants from Mexico and those who were United States residents). He states: "With the exception of mentoring and occupational planning, both groups seemed to follow the basic structure of Levinson's theory." However he points out that people tend to have some cultural biases. He suggests that it is essential to understand "unique life experiences" so these biases can be reduced.

III. ADULT LEARNING STYLES

Smith (1982) lists 17 different learning-style inventories that can be used to help adults determine their prevalent learning style. Kolb's Learning Style Inventory (1985) has been used as the model upon which a great deal of experiential learning processes used in training and classrooms has been based. The Myers-Briggs Type Indicator (1976), based on the concepts of Carl Jung (1971), has been used extensively to provide information to the adult learner on preferences regarding thinking, feeling, perceiving, intuiting, sensing, and judging, together with a tendency toward introversion versus extroversion. McCarthy (1981) has combined the two models into the 4Mat System and suggests that an integrated approach to teaching is necessary in order to meet the diverse learning styles and brain dominance processes of the learner. Superimposed on these typologies is the recognition that people vary in learning modalities (visual, aural, and kinesthetic). Therefore in order to be attentive to this diversity of learning styles, effective teaching must be

sensitive to each one.

IV. ADULT CRITICAL THINKING SKILLS

"We have seen that critical thinking comprises two interrelated processes: identifying and challenging assumptions, and imagining and exploring alternatives." (Brookfield 1987)

Brookfield (1987) lists the components of critical thinking.

- Identifying and challenging assumptions.
- Challenging the importance of context
- Trying to imagine and explore alternatives
- Imagining and exploring alternatives leads to reflective skepticism.

He points out (13): "Being a critical thinker involves more than cognitive activities such as logical reasoning or scrutinizing arguments for assertions unsupported by empirical evidence. Thinking critically involves our recognizing the assumptions underlying our beliefs and behaviors. It means we can give justifications for our ideas and actions. More important, perhaps, it means we try to judge the rationality of these justifications."... "Critical thinking, then, involves a reflective dimension."

According to Levinson (1978) adults start "to question and reappraise the existing structure...and to modify the present structure so that a new one can be formed. To think critically."

Brookfield (1987) states "...people cannot reach adulthood without bringing with them frameworks of understanding and sets of assumptions that undergird their decisions, judgments, and actions." Critical thinking begins when they start to call into question or challenge the assumptions upon which they were built. Boyer (1988), citing the recommendations of

the Carnegie Report, stated that teaching students to think critically and helping them to make connections between the concepts that are taught is essential.

The role of the professor is to help people examine these frameworks. Moreover the leader needs to become aware of how these frameworks were developed in order to help the student explore and examine options. In facilitating critical thinking instructors need to be recognize the diversity in the classroom (Boyer 1988). Further, "diversity and divergence would be accepted, even encouraged, so that in problem-solving groups there would be no attempts to bring matters to some form of artificial resolution." (Brookfield 1987, 71). Further, "facilitators would model openness and critical analysis."

Brookfield (1987) describes several concepts that encourage critical thinking of adults:

Self-worth: The process must affirm the adult. If students are encouraged to explore the unknown, "there is no point in....asking insightful questions if people are insulted or intimidated by the process." (Brookfield, 1987, 72)

Listen attentively: "Coming to understand things from their [student] viewpoints is the essence of effective listening." (73) Included is attention to verbal and nonverbal behavior. Listening attentively will aid the teacher in framing questions to facilitate the process.

Reflective listening: By reflecting back to the critical thinker the attitudes they demonstrate, the teacher functions as a mirror to expand their awareness.

Critical teaching: Shor (1980) defines critical thinking as the technique whereby students become aware of ideas they have taken for

granted. According to Brookfield (1987) the role of the teacher may vary from being a catalyst, being a contributor, and being an advocate for a particular point of view. Meyers (1986) states that the main activity of critical teaching is building on the learner's past experiences to lead them to a more reflective way of thinking. Brookfield (1987) states that it is "helping learners to acquire new perceptual frameworks and structures of understanding."

Model critical thinking: Meyers (1986, 47) states "by modeling reflecting thought in lectures and discussion, teachers can do much to encourage this frame of mind in their students." Brookfield (1986, 47) delineates the steps: "clarity, consistency, openness, communicativeness, specificity, and accessibility."

V. APPLICATION IN THE UNIVERSITY CLASSROOM

> "Praxis: learners and facilitators are involved in a continual process of activity, reflection upon activity, collaborative analysis of activity, new activity, further reflection, and so on."
>
> Brookfield, 1986

> Tell me, I forget.
> Show me, I remember.
> Involve me, I understand
>
> Ancient Chinese Proverb

Since adults bring to the learning process a variety of knowledges and experiences, the role of the leader often alternates between professor and facilitator. Facilitator, to provide a learning environment that encourages questioning and critical thought; professor, to provide theoretical concepts to be added to and incorporated in the knowledge base;

and then back to facilitator to design teaching methodologies that focus on andragogy, rather than pedagogy (Knowles 1978). Robinson (1979) distinguishes between the two views of education in the Table 1 adapted from the work of Knowles.

Table 1

PEDAGOGY VERSUS ANDRAGOGY

Elements	Pedagogy (Teacher-Directed)	Andragogy (Self-Directed)
Climate	Formal authority-oriented competitive, judgmental	Informal, mutually respectful consensual, collaborative supportive
Planning	Primarily by teacher	By participative decision-making
Diagnosis of Needs	Primarily by teacher	By mutual assessment
Setting Goals	Primarily by teacher	By mutual negotiation
Designing a Learning Plan	Content units Course syllabus Logical sequence	Learning projects and learning content sequenced in terms of readiness
Learning Activities	Transmittal techniques, Assigned readings	Inquiry projects, independent study, experiential techniques
Evaluation	Primarily by teacher	By mutual assessment of self-collected evidence

In focusing on andragogy, in order to enhance the learning experience of the adult student, the university professor faces the challenge of seeking ways of providing an environment that supports adragogy. This can be achieved by examining the principles of adult learning and incorporating these concepts into course design.

Jones and Woodcock (1985, 100-101) delineate adult learning principles and the implication for course design:

Table 2

PRINCIPLES OF ADULT LEARNING AND COURSE DESIGN

Learning principles	Implications for course design
The adult is a partner with the instructor in the learning process	Participants should actively influence the learning approach
Adults are capable of taking responsibility for their own learning	Incorporate self-directed learning activities in the course design
Adult learners gain through two-way communication	Avoid over-use of lectures and 'talking-to', emphasize discussion
Adults learn through reflection on their and others' experience	Use interactive methods such as case studies, role, playing, etc.
Adults learn what they perceive to be useful in their life situations	Make the content and materials materials closely fit assessed needs
Adults' attention spans are a function of their interest in experience	Allow plenty of time to process the learning activities
Adults are most receptive to instruction that is clearly related to problems they face daily	Include applications planning in each learning activity
Adults learn best when they as being treated with respect	Promote giving inquiry into problems and affirm the experience of participants
Adults do not typically see themselves as learners	Give participants a rationale for becoming involved and provide opportunities for success
Adults learn better in a climate that is informal and personal	Promote getting acquainted and interpersonal linkages

Adult learners apply learning that they have been influential in planning	Diagnose and prioritize learning needs and preferences during the course as well as before
Adults learn when they feel supported in experimenting with new ideas and skills	Use learning groups as 'home bases' for participants
Adults are likely to have somewhat fixed points of view that make them closed to new ways of thinking and behaving	Include interpersonal feedback exercises and opportunities to experiment
Adults learn to react to the differential status of members of the group	Use sub-groups to provide safety and readiness to engage in open interchange
Adults are internally motivated to develop increased effectiveness	Make all learner evaluation self-directed
Adults filter their learning through their value systems	Provide activities that focus cognitive, affective and behavioral change

A. Teaching Principles

Apps (1981, 145-167) describes nine exemplary teaching principles for the adult learner:

1. Learn to know your students
2. Use the students' experience as class content
3. Tie theory to practice
4. Provide a climate conducive to learning
5. Offer a variety of formats
6. Offer a variety of techniques
7. Provide students feedback on their progress
8. Help students acquire resources
9. Be available to students for out-of-class contacts.

B. Teaching Methodologies

Applying these concepts to course descriptions and operationalizing them suggests a variety of techniques which

incorporate the needs of the adult learner. These are based on the concept of praxis (reflection and action) and the experiential learning cycle as described by Kolb (1984). Jones (1972) expanded the concepts and introduced activities that help operationalize the process in the classroom. Gaw (1979) added the dimension of a set of questions to aid the instructor in using the cycle in the classroom.

The experiential learning cycle is a process whereby the learners are involved in and responsible for their own learning. Listed below are descriptions of each stage of the process:

Experiencing is defined as generating individual data from one or more of the lectures, activities or experiences introduced by the professor.

Sharing is reporting the data generated from the experience.

Interpreting is making sense of the data generated for both individuals and the group.

Generalizing is developing testable hypotheses and abstractions from the data.

Applying is bridging the present and the future by understanding and/or planning how these generalizations can be applied and tested in a new place or situation.

According to Gaw (1979) the accomplished educator renders the experience more than merely an "exciting and involving one; he or she leads the participant through the cycle so that transfer of learning occurs (Benne 1976)." This facilitation role is enhanced with the use of questions which help the student transition from each stage of the experiential learning cycle. It is during these processes that the learner is gathering, exploring and understanding the concepts that have been introduced by the professor.

The following example demonstrates how the cycle can be used with mini-lectures:

After the mini-lecture (experiencing) on a specific concept is introduced by the professor, the students, divided in small groups, are asked to list and describe the concepts that they have gathered from the activity (sharing). After the small group discussions, the professor asks the groups to share the concepts. This gives the instructor the opportunity to clarify or correct information.

In the next stage (interpreting) the class is asked to explore and delve into the meaning of the concepts. Questions such as: How was that significant? How do those fit together? How might it have been different? What does that suggest to you? gives the students the opportunity for critical thinking as they examine the information beyond the knowledge and comprehension levels.

In the next stage (generalizing) the students are asked: What might we draw from that? What principle or law do you see operating? How does this concept relate to others? What does that help explain?

After the instructor facilitates the sharing of this information, the small groups move to the next stage, (applying). Questions such as How could you transfer or apply that? What are the options? What would be the consequences of doing/not doing that? What modifications would you make? This helps students apply and transfer the learning to their own experiences.

A final stage could be the processing of the entire activity, as the teacher facilitates a discussion on what the students have learned, how it is important, and how it leads into the next concept. The cycle takes information and keeps building on it, thus ensuring

transfer of the concepts to the next concept introduced.

As stated by Kolb (1984) the concrete experience (events that students are involved in) leads to reflective observation (reflection and collection of information on what has been learned) leads to abstract conceptualization (the development of ideas about the way things are or should be. These ideas lead to active experimentation, decisions about what to do and how to do it. This data continues by leading to the next concrete experience. Thus the experiential learning cycle, further defined and delineated by Jones and Gaw, become the basis for teaching adults. However, there is another dimension that enhances or hinders the learning for adults: the environment and how it supports or hinders self-esteem.

C. Classroom Environment

Listed below are several classroom environment concepts that respond to the needs of the adult learner.

Chart paper and colored markers:

Chart paper is used instead of chalk boards. The material the professor normally writes on the board and erases becomes part of a permanent record when it is written on chart paper. These records can be referred to during the entire class and, if appropriate, retained for subsequent classes. The use of two or three different marker colors (black, blue, brown) helps to distinguish one concept from the other.

Agenda posted:

This provides a structure that indicates there is a plan to how the class time will be used.

Objectives clearly defined:

Since most adults are goal oriented, they wish to know where to focus their energies. Projecting objectives gives them a sense of direction and an expectation of results.

Application of information learned:

Adults want to know how the information they are learning will be useful to them.

Safe environment:

Because this may be their first re-entry experience, the adult learner is often fearful of the unknown and anxious to make a good impression. They want an environment that is safe from ridicule and supportive of their efforts. Humor is only funny when focused on the instructor, not the student.

An aspect essential to the process is providing and maintaining an environment that preserves and/or enhances the self-esteem of the student. As pointed out by Brookfield (1988) the self-esteem of adults may be extremely fragile. Using the experiential learning cycle, having the student write his/her perceptions of the concepts to be discussed, and using small learning groups, gives the student the opportunity to explore new ideas, ask for clarity or information, and identify areas where he/she needs help or remediation. Because this exploration is conducted with small groups of peers, students who need help are more likely to identify and express it. Moreover, since the professor continually circulates to be available for questions, the students have greater opportunities to tell the instructor that they did not follow or understand the concepts and express need for clarity and explanation without exposing their lack of knowledge to the entire class.

D. Classroom Activities

Warm-up activity to focus group:

Rushing into class from a demanding day of teaching often causes stress for the students. An activity that focuses on the agenda and objectives gives them an opportunity to transition from the role of leader (teacher) to follower (student). For example, each person takes turns giving a one-word reaction to the subject that will be discussed in class.

Personal Focus:

Since adults frequently have knowledge in the areas that are to be taught, the process of personal focus (the student responds to a specific concept by writing his/her answer, sharing it with a fellow student, and discussing it) permits the learner to build confidence in order to be part of the entire group. Especially in newly formed classes, the students are fearful that what they think is inappropriate. By giving them the opportunity of sharing it with others, they can test out their ideas, modify them, and develop confidence to share them with the entire group. It also provides an outlet to talk and develop a support network with other students in the class.

Needs assessment:

Students bring a wealth of information to the learning environment. Yet they recognize the need to learn from the instructor. A needs assessment focusing on the subject area gives them an opportunity to recognize and appreciate the knowledge they bring to the subject, while, at the same time, understand that they are in the class because there is a great deal to be learned from the professor. Small groups are formed to provide a supportive atmosphere

as the students explore the areas defined by the instructor. The results of their discussion are charted so that at the end of the session, they can measure their knowledge level when they entered the class (needs assessment) and compare it at the end of the session to what they have learned about the subject that was discussed.

Mini-lecture providing new information:

Several studies indicate that people cannot listen, learn and assimilate lectures of more than 10 to 20 minutes. When lectures are too lengthy, the adult learners have learned to "student:" nodding and smiling at the instructor. This encourages the instructor to keep talking, but frees the student from taking part in the learning process. Limiting lectures to 10 to 20 minutes ensures that time will be left for the student to get involved in discussing the concepts.

Discussion of activity and new information:

Structured time to discuss the concepts aids the student in thinking critically about the new content. The use of instructor-developed questions ensures that the students stay on task.

Analysis and synthesis of activity and resulting knowledge:

This process enables the students to view the new information in the context where it will be applied. It avoids the dilemma of students knowing many facts and not having a way of relating them to the school or working environment.

Application of learning:

The student needs to be encouraged to find a way of using the knowledge immediately, either through a discussion with the site administrator or by developing a process to use it in his/her classroom. Otherwise it limits the learning and there is the danger

that it becomes a part of coursework only, but never a part of their working experience.

Process of evaluation:

Either through experience or discussion with the site administrator, the student needs to be encouraged to evaluate how meaningful the concept is in the field of educational administration. Some theories, although exemplary, don't work in all settings. This process forces the student to problem solve and examine all aspects of the concepts being taught.

E. Classroom Techniques

The style of instruction is instrumental in helping the students learn. The processes described below add the role of facilitator to the traditional role of the instructor.

Involving students in the lecture:

Guild (1983) describes a series of ways to involve students in the lecture. These include the following:

- Using visual aids. People need something to see after they have heard it to help them learn it.
- Encourage and use questions. Student questions can provide the basis for subsequent mini-lectures
- Guide note taking by providing information on areas that will be tested or will be incorporated into subsequent learning.
- Involve learners through written participation. This helps students clarify their thoughts and apply the concepts.
- Structure a lecture to solve a problem. State a problem before the lecture to involve the learners in seeking a solution.

- Use brainstorming before or during lecture to create a sense of involvement for the learner.
- Illustrate the concepts with a case study or critical incident to demonstrate how the concepts can be applied.

Interviewing techniques and effective listening:

Questions are really statements reworded to be heard as requests for information. However, adult students often interpret questions as interrogations (i.e. attack by question). Instructors can avoid this tendency by asking open-ended questions that elicit information from the student, not a defense to justify his/her point of view.

Skills of effective listening: Paying attention to body language, nodding, supportive gestures, and responding specifically to what the student says indicates to the student that the professor is listening. It could be argued that this is contrary to the instructor's responsibility to provide information and correct when the student is wrong. However, because of the need to support the self-esteem of the adult student, interviewing and effective listening behaviors help the student recognize his/her own point of view and how it differs with the concepts presented. Thus the student becomes the problem solver (along with the professor). Responsibility for learning is placed on the student, with the professor in the role of expert, coach and facilitator.

Triads/Dyads:

Small groups are essential at the beginning of any activity in which the adult learner is expected to participate. Groups of two's and three's give the people time to get to know one another while discussing the issues.

Small Groups:

Friends often sit with one another in a classroom. This can create problems because it may inhibit individual thinking or they might be inclined to visit, not work. The instructor faces the dilemma of creating work groups that will get down to the task assigned. By having the participants count off around the room, the people with the same number become work groups.

For example, if there are 25 in a class, and groups of five appear practical, then the class is asked to count off, one through five, and repeat it five times. Then all the number one's (5) become a group, all the number two's (5) become a group, and so on. In that way, new groups can be formed and people who normally do not have the opportunity to talk can discuss the issues and learn from one another.

Brainstorming:

In this process, students share and chart their thoughts about a particular subject. In order to encourage creativity, the following rules should be delineated: nothing stated is wrong; no one has to justify his/her point of view; the student's actual words are charted; and all members of the group are given the opportunity to participate. This process frees the participants from censoring their thoughts and often leads to the generating of additional items.

Nominal Group Technique:

This process is a structured brainstorming session. Each person in a small group is responsible for a certain expertise or area of study. After being convened, the participants share their information in a "round-robin" process. Each takes a turn in sharing the information. It is charted in a sequential way, one after another. The list is complete when each person's research or thoughts on the

subject are exhausted. It is then synthesized and prioritized. If appropriate, the best solution becomes an action item.

Role Plays:

After teaching a particular concept, the students act out role plays, either written by them or the professor. In that way they can try out the new skills in a supportive environment and evaluate how well they have been mastered. In addition, if one person is assigned as a process observer to each role play, the participants can get feedback from someone who was not involved in the emotions generated by the role play.

Case Studies:

These can be real life situations developed by the professor or the students. They incorporate the concepts being taught, and give the students an opportunity to problem solve the issues that are being taught. Discussions led by the professor help them specify the areas that are clear and identify those that need restudying.

Cooperative Learning:

Often known as team learning, this is a process whereby students are assigned to specific groups with the task of teaching one another theory and concepts generated by textbooks, articles, or research. Since the grading could be based on how the team works, students must work cooperatively on the task in order to maximize their abilities. Often students have an expertise on a subject. By creating heterogeneous groupings, the professor can give students with expertise the opportunity to share their knowledge with each group. If all students lack information on the subject, then homogeneous groupings have each person responsible for a segment of the concepts

which he/she must teach to their entire group.

For example, teams are created and each person is given an area to study. When they are through studying, expert groups are formed consisting of the person from each group who is responsible for a particular segment, grouped with people from other groups who have the same area of study. They share and discuss their area and create a report that represents the concepts to be taught to their team members. It is at this point that students who have made mistakes in understanding the concepts are corrected by their peers. Similar discussions on other areas of study are going on in the other expert groups.

After each group has synthesized the information and created its reports, the original teams are reconvened and each person has the responsibility of teaching his/her area of expertise to team members. If appropriate, pre and post tests can be administered. Or expert groups can create test questions while developing the report.

This process provides a medium for students to demonstrate their leadership capacity. Further, because students represent cultural diversity, it gives all students the opportunity to demonstrate their knowledge and helps to eliminate stereotypes regarding different ethnic and cultural groups.

Fish-bowl Technique:

Students are given a subject to study or a role to play. They are placed in the center of the room, with the balance of the students around the perimeter. The role play or discussion begins and the observers take notes on the process. If arranged, they can tap their hand on the shoulder of a role player and ask to take his/her place. In another application, one person sits behind each role player,

coaching the participant on alternative techniques to apply to the role. Or, if appropriate, they may alternate places. When the role play is over, the teacher, in the role of facilitator, engages the entire group in a discussion of the process. If appropriate, the instructor may provide theory or concepts at the end of the exercise.

Instant Instrument:

This process enables the students to set a standard of excellence insofar as a particular expertise is concerned and then evaluate their own abilities against the criteria that is set. For example, in introducing the concepts of effective instructional leadership, the professor asks each person to reflect on an administrator that demonstrated these skills. After writing (personal focus) and sharing each list, a composite list is generated. If appropriate the professor can augment the list. Then the participants are asked to evaluate their own level of proficiency based on the criteria generated, using a scale of one (low) through five (high). After the self-analysis, the students are asked to target their learning by focusing heavily on the areas and expertise they need to develop.

Expert Groups:

Individual groups can be assigned a specific topic for which they study and become experts. They then either present the material to the entire class or become part of a team learning process and share their expertise with their team. Or it can be used with the nominal group technique process.

Process Observers:

Students are trained in the processes of observation and feedback. They learn and about task and maintenance behaviors in

groups and observe and takes notes about the processes with a group. At the end of the activity, they provide an added dimension of someone whose role is to observe the interpersonal dynamics of the participants, and not take a position on the issues being discussed.

F. Student Expectations and Responses

Students may question the experiential teaching processes and learning cycle for several reasons. This might occur because their past experiences were in teacher-centered, lecture oriented classrooms where their role was less involved. Or there may be a resistance to engage in the processes because they believe that the only teaching must be presented by the professor. Or they may have become accustomed to being passive in the classroom and involvement places a responsibility on them to be active and take charge of their own learning. Whatever their motivation, there are several techniques to help them accept this new role.

The first step is to introduce the experiential learning process, the concepts of adult learning, and the adult critical thinking model. This systematic methodological approach indicates that the instructor is using the new process because it enhances learning, not because it is a whim or an easier way to teach. By creating a theoretical base, the professor clarifies teacher-student roles. Students need to be clear that the purpose of this process is not for the instructor to abdicate responsibility, but to alternate teaching and facilitating to enhance the learning experience of students.

Explaining the process also gives students the opportunity to examine their past experiences and share with the instructor ways that enhance their learning (i.e., learning styles, modalities). The instructor gains valuable insight into the students by this self-

disclosure. This also gives the instructor the opportunity to set the standards for communication and openness and build the trusting relationships that are essential for the processes to work.

The clarification process helps students whose self-esteem needs bolstering. Small groups gives quiet students the opportunity to be heard, to be helped, and to be leaders. Student participation is not relegated to the 40 percent who will speak in class; participation becomes a 100 percent student involvement experience. For many students (Boyer 1988), this may be their first opportunity to speak in the college classroom.

VI. SUMMARY

At the recent Faculty Symposium on Teaching Effectiveness, Dr. Ernest Boyer (1988) suggested that professors at institutions of higher education need to examine their pedagogy to ensure that their teaching methodologies are responsive to the learning needs of the students. At the California State University, Los Angeles, over 55 percent of the students are adult; in the Educational Administration Program, all are adult.

In that context, it is incumbent on professors to examine their teaching methodologies to take into consideration adult development, adult critical thinking skills, and the influence these have on classroom techniques.

Knowles distinguishes between pedagogy (teacher directed) and andragogy (student directed). He suggests that, because of the variety of experiences they bring to the classroom, adults learn best under an andragogous environment. Jones delineates many strategies to operationalize andragogy in the learning environment.

Brookfield posits that there are many techniques and strategies to

encourage and enhance critical thinking skills in adults. He emphasizes that the role of professor may alternate between teacher and facilitator.

Kolb, Gregoric, and the many others cited point out that adults learn in a variety of ways. Jones embellishes on these concepts and introduces an expanded experiential learning cycle to incorporated the various methodologies into a coherent classroom protocol.

Delineated are a variety of classroom strategies to augment the processes already used in the classroom. These include teaching principles, teaching methodologies, classroom environment, classroom activities, and classroom techniques.

It is recognized that lecture is a well-established and researched method to impart knowledge in the classroom. The review on the adult learner suggests that this process will be enhanced by the application of techniques designed to support the unique learning needs of adult students.

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